

WHAT IS CLAIMED IS:

1. An integrated circuit comprising:
 - a first port to receive a first signal from a first channel;
 - a first device, coupled to the first port, to modify a channel response
 - 5 of the first signal received from the first channel; and
 - a waveform capture device, coupled to the first device, to capture a waveform of a signal modified by the first device.
2. The integrated circuit of claim 1, wherein the first device comprises
- 10 a filtering device and a sampling circuit.
3. The integrated circuit of claim 2, wherein the filtering device filters the first signal from the channel prior to the sampling circuit.
4. The integrated circuit of claim 2, wherein the sampling circuit
- 15 samples the first signal from the channel prior to the filtering device.
5. The integrated circuit of claim 1, further comprising:
 - a second port to receive a second signal from a second channel;
 - a second device, coupled to the second port, to modify a channel
 - 20 response of the second signal received from the second channel; and

another waveform capture device, coupled to the second device, to capture a waveform of a signal modified by the second device.

6. The integrated circuit of claim 1, wherein the first device comprises
5 a filtering device that includes a plurality of voltage-to-current converters and a plurality of current multipliers coupled in a plurality of stages.

7. The integrated circuit of claim 6, wherein the filtering device further includes a plurality of sampling circuits to sample the signal received at the first
10 port.

8. The integrated circuit of claim 1, wherein the first device includes a plurality of stages, each configured to provide a separate response.

15 9. The integrated circuit of claim 1, wherein the waveform capture device includes a variable offset to skew a reference current.

10. The integrated circuit of claim 1, wherein the signal comprises a differential signal.

20

11. A chip comprising:

a processing circuit to receive a signal across a channel and perform signal processing on the signal, the processing circuit to output a processed signal; and

5 a waveform capturing device to capture a waveform of the signal based on the processed signal.

12. The chip of claim 11, wherein the processing circuit comprises a filtering device and a sampling circuit.

10

13. The chip of claim 12, wherein the filtering device filters the signal from the channel and prior to the sampling circuit.

14. The integrated circuit of claim 12, wherein the sampling circuit
15 samples the signal from the channel prior to the filtering device.

15. The chip of claim 11, wherein the processing circuit modifies a channel response of the received signal.

20 16. The chip of claim 11, wherein the processing circuit comprises a filtering circuit that includes a plurality of voltage-to-current converters and a plurality of current multipliers coupled in a plurality of stages.

17. The chip of claim 16, wherein the filtering circuit further includes a plurality of sampling circuits to sample the received signal.

18. The chip of claim 11, wherein the processing circuit includes a plurality of stages, each configured to provide a separate response.

19. The chip of claim 11, wherein the waveform capturing device includes a variable offset to skew a reference current.

20. A method comprising:
receiving a signal from a channel;
modifying a channel response of the received signal; and
capturing a waveform of a signal having the modified channel response.

15

21. The method of claim 20, wherein modifying the channel response including performing a filtering operation on the received signal.

22. The method of claim 21, wherein modifying the channel response further includes a sampling operation of the received signal.

20

23. The method of claim 22, wherein the filtering operation occurs prior to the sampling operation of the received signal.

24. The method of claim 22, wherein the sampling operation of the
5 received signal occurs prior to the filtering operation.

25. The method of claim 21, wherein the filtering operation includes dividing the received signal into a plurality of stages.

10 26. The method of claim 25, wherein each of the stages includes a voltage-to-current converter and a current multiplier.

27. The method of claim 25, wherein the filtering operation further includes combining filtered responses.

15

28. The method of claim 27, wherein capturing the waveform includes sampling the combined filtered response.

29. The method of claim 28, wherein capturing the waveform further
20 comprises skewing a reference current.

30. The method of claim 20, further comprising:
receiving another signal across another channel;
modifying a channel response of the received another channel; and
capturing a waveform of a signal having the modified channel
5 response.

31. An electronic system comprising:
an integrated circuit including a port to receive a signal from a
channel, a processing device, coupled to the port, to modify a channel response
10 of the signal received from the channel, and a waveform device, coupled to the
processing device, to capture a waveform of a signal modified by the processing
device; and
a network interface to couple the integrated circuit to a network.

15 32. The electronic system of claim 31, wherein the processing device
comprises a filtering device and a sampling circuit.

33. The electronic system of claim 32, wherein the filtering device filters
the received signal from the channel prior to the sampling circuit.

20

34. The electronic system of claim 32, wherein the sampling circuit
samples the received signal from the channel prior to the filtering circuit.